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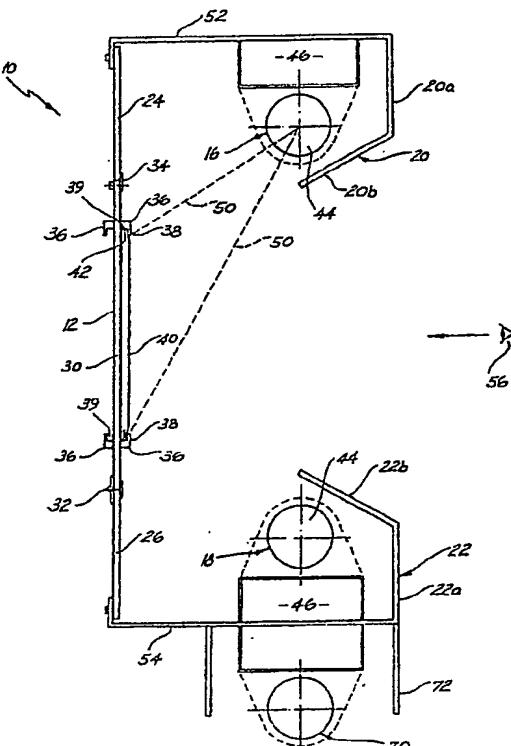
(56) Documents cited  
GB 1448675  
GB 1379237

GB 1339015  
GB 1010857

(58) Field of search  
G5C

## (54) Illuminated display units

(57) A display unit designed to provide a three dimensional or depth effect to photographs or estate agents' displays 42 comprises a substantially flat, upright backing 12 against which the photographs are supported, illumination means in front of the backing in the form of strip lights 44 one above and one below the backing region against which photographs are supported, each strip light being similarly spaced so as to provide even illumination, and translucent covers 20,22 for masking the strip lights so as to prevent the direct passage of light from the strip lights to the eyes of a person looking at the photographs. The covers are preferably of brightly coloured translucent material so that they are very distinctive to the eye.



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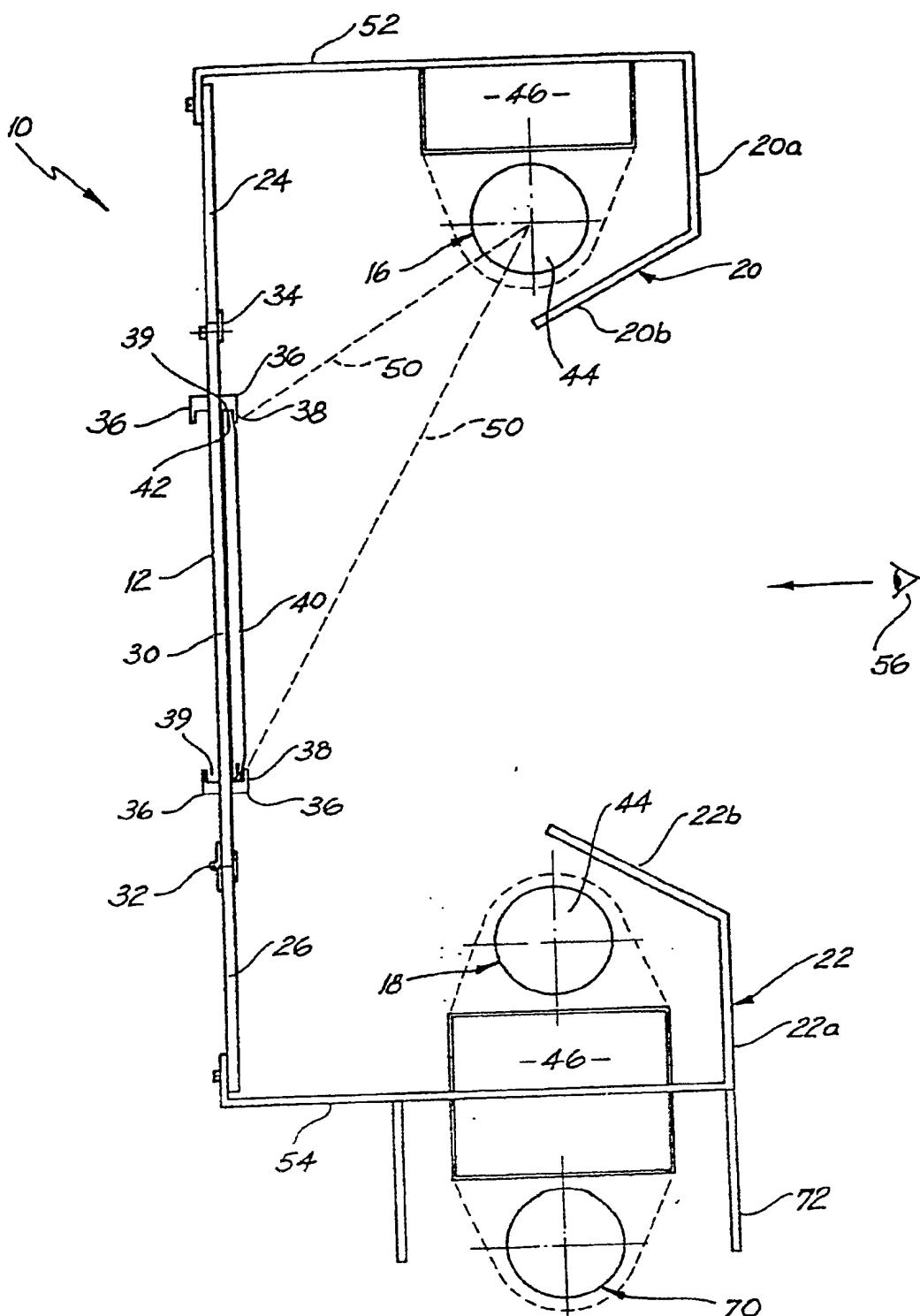


FIG. 1

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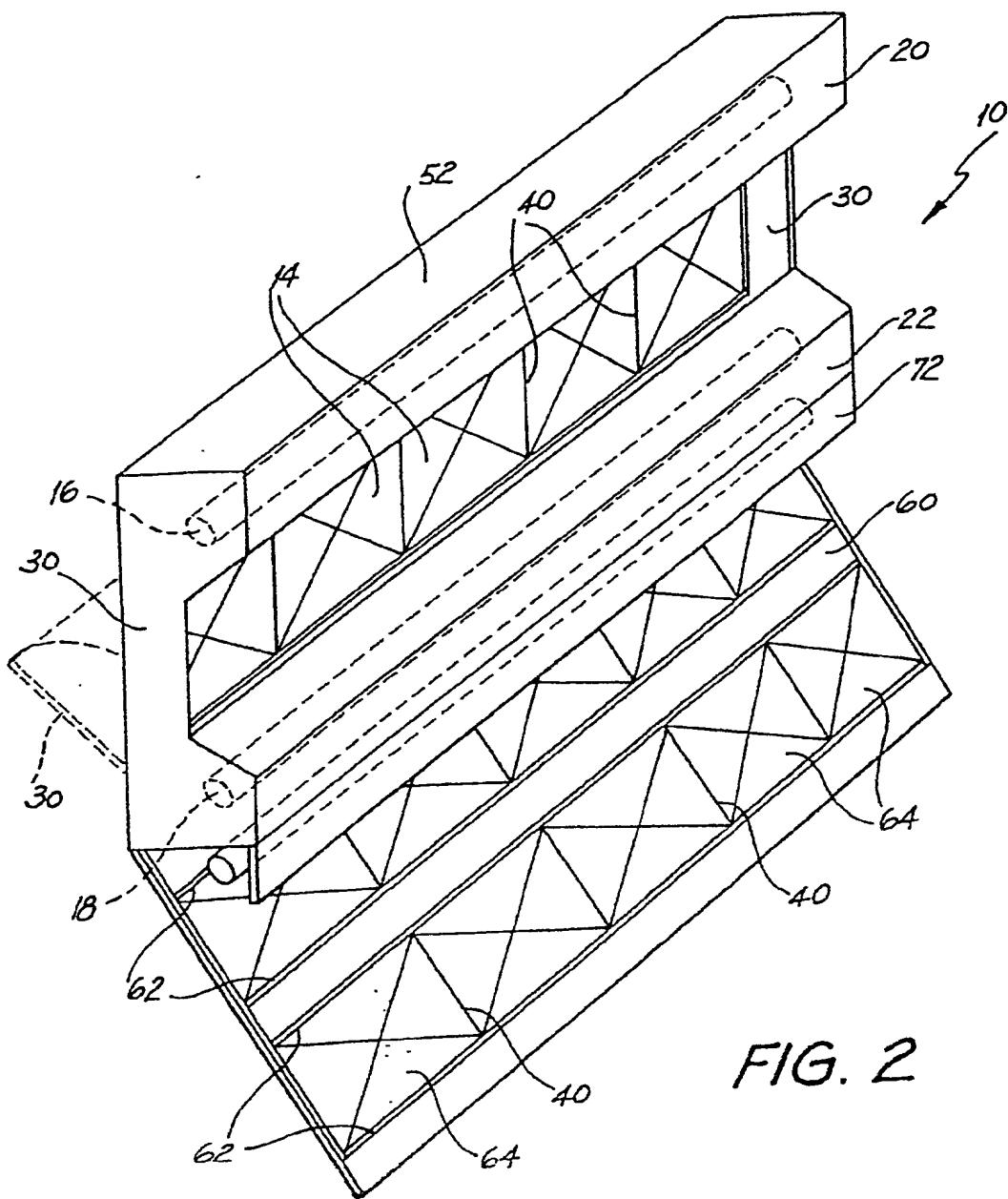


FIG. 2

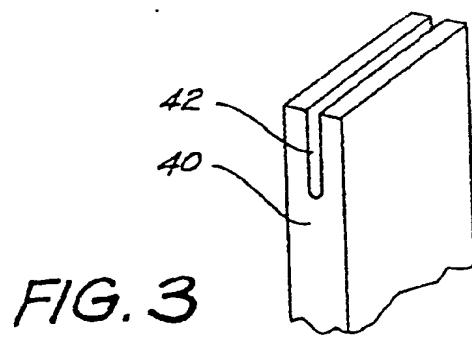


FIG. 3

## SPECIFICATION

## Improvements in display units

5 This invention relates to display units for displaying sheet material such as photographs, particularly for advertising purposes in the windows of persons such as estate agents.

The sheet material to be displayed could be 10 photographs, pictures, printed sheets which for simplicity will be referred to simply as photographs and so the term photographs is to be construed as embracing all such sheet material unless the context specifically requires otherwise.

15 It is an object of the invention to provide a display in which photographs on display are easy to view and which can have a distinctive appearance capable of attracting the attention of potential customers.

According to the invention, there is provided a 20 display unit for photographs and like sheet material, comprising a substantially flat, upright backing against which the photographs are supported, illumination means in front of the backing in the direction in which the photographs are viewed, the 25 illuminating means being in the form of strip lights, one above and one below the backing region against which photographs are supported, each strip light being similarly spaced and angled relative to that backing region so as to provide even illumination 30 across that region, and translucent covers for masking the strip lights and positioned in front of that region so as substantially to prevent the direct passage of light from the strip lights to the eyes of a person looking at the photographs.

35 Such a display unit appears to give the flat photographs placed against the backing a 3-dimensional appearance. It is not clear whether this is a result of the evenness of illumination, the angle of illumination or the presence of the translucent covers for the strip lights which give the depth impression because they are positioned in front of the photographs in the direction of viewing by an observer.

In addition the covers can be of bright translucent 45 colours which provide, particularly when the strip lights are illuminated, distinctive bars of colours above and below the photographs on display and these bright colour bars attract the attention of passers-by and potential customers. If desired, the 50 owner of the display can have his name or other identifying or advertised information printed on the covers, particularly the lower cover, e.g. by silk screen printing if the covers are of synthetic plastics material.

55 The display units of the invention are particularly, but not exclusively, useful for the windows of estate agents and the photographs can be enlarged prints of photographs of properties for sale.

The unit of the invention is desirably positioned so 60 as to be at eye level and viewed at that level by observers. So as to make full use of the window space available, however, a lower backing is preferably positioned beneath the unit and illuminated either with the lower strip light or a third strip light 65 which is positioned behind the lower translucent

cover, that lower backing being inclined to the upright so as to be angled towards the observer looking at the unit of the invention so that he can see it at an angle approaching a right angle so as to

70 reduce the necessity to bend or stoop down to see any extra photographs displayed on the lower backing.

The translucent covers and preferably comprise a flat front portion positioned substantially upright

75 and parallel to the backing for the photographs and an inclined portion positioned to extend from the front portion rearwardly towards the backing, the inclined portions of the two covers being inclined rearwardly and inwardly towards one another to

80 provide a tapering opening through which photographs are viewed by an observer. The angle of inclination of the inclined portions and their length should be chosen so that they wrap around the strip light to prevent their being seen directly by an

85 observer and so that light from one strip light is not reflected directly from the surface of the opposite inclined portion outwardly and directly into the eyes of an observer.

For good results we have found that each strip

90 light can be positioned so that the angle at which incident light from the strip light impinges on the photograph ranges from about 60° at the adjacent edge to about 28° at the other edge. These angles can vary from about 50° to 70°, and more preferably

95 55° to 65°, for the adjacent edge, to about 25° to 33° at the other edge. It also appears to be desirable for the depth of the unit from the front of the covers to the backing to be slightly larger in dimension than the height of a photograph display from one side to the 100 said other edge.

The photographs on view are held flat against the backing. The backing therefore is preferably provided with a spaced pair of flanged strips between which the photographs are held, each flanged strip

105 providing an elongate recess into which an edge of the photograph can be inserted to position it. To assist in holding the photographs flat to prevent distortion or wrapping in sunlight or the like, other upright strips are provided extending across the

110 flanged strips to hold the upright edges of the photographs flat. These strips can have slotted edges which can be compressed to fit and be wedged tightly within the elongate recess.

An example of a display unit according to the

115 invention will now be described with reference to the accompanying drawings, in which:

*Figure 1* is a section through the unit;

*Figure 2* is a perspective side and front elevation of the unit together with an extra lower backing; and

120 *Figure 3* is an enlarged detail showing how the photographs can be secured in place on the backing.

The display unit 10 shown in the drawings includes a backing 12 against which photographs 14 are to be displayed. In front of, and above and below, 125 the photographs are two fluorescent lights 16 and 18 which illuminate the backing and the photographs supported against the backing. Covering the lights 16 and 18 are upper and lower translucent covers 20 and 22.

130 The backing 12 comprises upper and lower sheets

24 and 26 which are joined to ends 28. Intermediate these sheets 24 and 28 is a hinged sheet 30. This is hinged to the lower sheet 24 by means of a hinge 32 and all three sheets are held in line by latches 34 5 which engage the upper sheet 24. The hinged sheet can hinge outwardly and downwardly as shown in Figure 2 to replace photographs 14 when desired from the rear of the unit 10.

A pair of spaced elongate flanged strips 36 are 10 attached to the front face of the sheet 30. They are spaced apart by the height of a photograph 14 and their flanges 38 define elongate slots 39 into which the edges of photographs 14 can be received. In this way the top and bottom edges of photographs can 15 be held flat. The upright side edges of photographs are held flat by means of upright strips 40 which cover the edges of adjacent photographs and extend between the strips 36. These upright strips 40 have sheets 42 in the ends (see Figure 3) and so their ends 20 can be compressed to wedge them tightly in the slots 39 so that they can be held very firmly in place and at the same time hold the upright side edges of the photographs flat.

Similar spaced strips 36 are provided on the rear 25 face of the sheet 30 so that if desired additional photographs can be mounted there in a similar fashion. Thus if the unit is placed in a window, the photographs on the rear can be seen from inside after a potential customer has entered.

30 The fluorescent lights 16 and 18 comprise conventional tubes 44 supported by conventional frames 46 which contain wiring and ballast (not shown). The tubes 44 are each evenly spaced above or below and in front of the region of the backing sheet 30 35 between the strip 36. In the example shown the angle at which light impinges on the photographs 14 varies from about 60° at one edge to about 28° at the opposite edge; these angles being shown in Figure 1 by the dotted lines 50. As a result there is very even 40 illumination of the photographs.

The covers 20 and 22 comprise flat upright front portions 20a and 22a and integral inclined portions 20b and 22b respectively. The two portions cover the tubes 44 and prevent direct light from the tubes 45 reaching the eye 52 of an observer. Also the portions 20b and 22b extend sufficiently far in a rearward direction to prevent light from one tube reaching the inclined portion over the other tube and then being reflected from its surface directly into the eyes of an 50 observer. The inclined portions are inclined at about 60° to the upright and mask from the eye of an observer most of the sheets 24 and 26 and provide a tapering region as seen from the front which has the effect of guiding the eye of an observer towards the 55 photographs 14. In addition the covers themselves, which are translucent e.g. of acrylic plastics material, give an overall depth to the photographs on display.

The unit has a top 52 and base 54. These are shown in Figure 1 as being formed integrally with 60 the covers 20 and 22, respectively, but that is not essential.

Referring in particular to Figure 2, an additional display sheet 60 may be provided beneath the unit 10. This sheet has strips 62 similar to the strips 36 to 65 support two more rows of photographs 64, strips 40

being provided between the spaced strips 62 to hold the photographs flat. The display sheet 60 is inclined forwardly to the upright so that it is readily seen flat by an observer when the unit 10 is at about eye level.

70 As shown in Figure 1 an additional fluorescent light 70 is provided beneath the base 54 to illuminate the display sheet 60 and this fluorescent light is masked from direct view by a sheet 72 which acts as a continuation of the portion 22a of the cover 22. It is 75 therefore preferably of the same translucent material and colour as the cover 22.

If desired an advertising logo or other information can be provided on the portion 22a and/or the sheet 72, such as the name of the proprietor of the shop or 80 the like, telephone number and so on. Such information can also be provided on the portion 20a if desired. If the covers 20 and 22 and sheet 72 are of acrylic plastics material then this information can be silk screen printed on them. The colours of covers 20 85 and 22 can also be chosen to match a customer's overall corporate image.

90 Preferably all of the materials of the unit, apart from the fluorescent lights, are of synthetic plastics material so that they can be relatively cheap, light in weight and readily kept clean.

The width of the unit 10 as seen from the front is only limited by the space available for it and the length of available fluorescent lights. In general it 95 can be tailored to suit an individual customer's space requirements and two or more units can be fitted side by side.

An important advantage of the unit 10 is that the 100 covers can be chosen to have bright translucent colours when the tubes 44 are illuminated. They are very distinctive so as to attract the attention of passers-by. When customers come to look then the lighting arrangement and covers seems to give a feeling of depth of perception to the photographs 14.

As noted above the unit 10 is particularly useful in 105 the windows of estate agents. This is not essential and instead units 10 can be freely mounted indoors, as a back to back display and so on to suit an individual customer's requirements.

## 110 CLAIMS

1. A display unit for photographs and like sheet material, comprising a substantially flat, upright backing against which the photographs are supported, illumination means in front of the backing in the direction in which the photographs are viewed, the illuminating means being in the form of strip lights, one above and one below the backing region against which photographs are supported, each strip light being similarly spaced and angled relative to the backing region so as to provide even illumination across that region, and translucent covers for masking the strip lights and positioned in front of that region so as substantially to prevent the direct passage of light from the strip lights to the eyes of a person looking at the photographs.

2. A display unit as claimed in Claim 1 in which the covers are of coloured translucent material.

3. A display unit as claimed in Claim 2 in which the covers have advertising wording, logo or like

information printed on them.

4. A display unit as claimed in any preceding  
claim further comprising a lower backing positioned  
beneath the unit and illuminated by either the lower  
5 strip light or a third strip light positioned behind the  
lower translucent cover, that lower backing being  
inclined and angled towards an observer looking at  
the display unit at eye level.

5. A display unit as claimed in any preceding  
10 claim in which the translucent covers comprise a flat  
front substantially upright position and an inclined  
portion extending from the front portion rearwardly  
towards the backing, the two inclined portions  
providing a tapering opening through which photo-  
15 graphs are viewed.

6. A display unit as claimed in Claim 5 in which  
the inclined portions are positioned so that the strip  
lights are not directly visible to an observer of the  
photographs and so that light from one tube is not  
20 directly reflected from the surface of the opposite  
inclined portion into the eyes of an observer.

7. A display unit as claimed in any preceding  
claim in which the lights illuminate the photographs  
over an angle of from 50° to 70° at the adjacent edge  
25 to 25 to 33° at the opposite edge.

8. A display unit as claimed in Claim 7 in which  
the angle of illumination ranges from about 55° to  
65° at the adjacent edge to 25 to 33° at the opposite  
edge.

30 9. A display unit as claimed in Claim 7 in which  
the angle of illumination ranges from about 60° at  
the adjacent edge to about 28° at the opposite edge.

10. A display unit as claimed in any preceding  
claim in which the backing has a pair of spaced  
35 flanged strips between which the photographs are  
held, each flanged strip providing an elongate recess  
into which an edge of the photograph can be fitted.

11. A display unit as claimed in Claim 10 in which  
upright strips extend between the spaced strips over  
40 the side edges of photographs to hold them in place,  
the ends of the upright strips having a slit to enable  
them to be compressed to be wedged tightly in the  
elongate recesses.

12. A display unit for photograph and like sheet  
45 material, substantially as herein described with  
reference to the accompanying drawings.